2005-2006 Influenza Season Summary

Virginia Sentinel Surveillance

Sentinel surveillance data were collected from the beginning of October through the beginning of May. Data from the first six weeks were used to determine baseline and threshold levels of influenza-like illness (ILI) in Virginia. Data from the remainder of the season were used to classify influenza activity as sporadic, local, regional, or widespread. Sporadic activity began during the week ending December 3. It continued until the local activity level was reached in the week ending January 7. Widespread activity was observed from the weeks ending February 4 through April 8, 2006. Peak activity occurred during the week ending March 11, 2006, which was approximately the same time as the peak reported in the CDC U.S. Sentinel Physician Surveillance Network and approximately two weeks later than peak activity during the Virginia 2004-05 influenza season. Graph 1 shows weekly surveillance numbers by region; Graph 2 shows comparisons between 2005-06 and 2004-05 Virginia influenza seasons.

CDC Sentinel Surveillance

Fifteen physicians from Virginia participated in the CDC sentinel influenza surveillance system. The number of ILI cases seen by age group and the total number of patients seen for any reason were entered into a secure CDC web page each week. Nationally, the percentage of visits due to ILI peaked during the week ending January 25, 2006 (similar to last year) and remained at that level until March 11, 2006, (Graph 4). Among Virginia's CDC sentinel physicians, the percentage of ILI visits (8.1%) peaked during the week ending March 11, 2005, the same week as the peak reported by Virginia sentinel physicians not participating in the CDC system. Similar to last year, the 5-24 year old age group made up the greatest proportion of ILI visits among all Virginia providers in the CDC system, followed by the 25-64 year old age group (Graph 5).

Outbreaks

Thirty outbreaks of influenza were reported to VDH from various facilities, including nursing homes/assisted living centers (25), retirement homes (2) and schools (3). Of the 30 reported outbreaks, 8 were from the Central health-planning region, 11 from the Eastern, and 11 from the Southwest region of Virginia. The first outbreak was reported during the week ending December 31, 2005, and the last was reported during the week ending April 8, 2006. The outbreaks were spread throughout the season, with the most activity observed the week ending February 26, 2006. Various strategies were used to contain outbreaks, including vaccination of unvaccinated individuals; administration of antiviral medications; cohorting staff/residents; implementing infection control precautions; and halting facility admissions until the outbreak was contained.

Childhood Deaths

Two influenza-associated pediatric deaths were reported to VDH during the 2005-06 influenza season. One death occurred in a resident of the southwest region and one occurred in the eastern region. The deaths were both in young children under five years of age. Nationwide, thirty-five deaths in children were reported.

Laboratory Surveillance

During the 2005-06 influenza season, Virginia Division of Consolidated Laboratory Services (DCLS) tested 309 respiratory specimens for influenza virus using antigen detection by direct fluorescent antibody (DFA) and/or virus culture. The specimens were collected from October 1, 2005 through May 13, 2006 from 309 patients.

From the 309 patients, influenza A virus was detected by DFA and/or culture in 94 patients (30%). Influenza B was detected in 6 patients (2 %). The first influenza positive specimen was collected during the week ending December 3, 2004 (influenza A isolated); the collection week end date of the last influenza positive specimen was April 16, 2006.

Of 94 influenza A isolates subtyped by monoclonal antibody, 8 were subtype H1 and 86 were subtype H3. Thirteen influenza A/H3 isolates were further subtyped at CDC with the following results: 8 Influenza A/California/07/2004 (H3N2), 4 Influenza A/Wisconsin/67/2005 (H3N2), and 1 Influenza A/New York/55/2004 (H3N2). Subtyping of 2 other Influenza A/H3 isolates is pending at CDC. Eight Influenza A/H1 isolates were further subtyped at CDC; all 8 were Influenza A/New Caledonia/20/99 (H1N1). Six Influenza B virus isolates were subtyped at CDC; 5 were Influenza B/Ohio/01/2005 and 1 was Influenza B/Florida/07/2004.

Viruses other than influenza were cultured from 11 respiratory specimens of the 309 patients tested. These viruses were identified as: adenovirus (3); parainfluenza virus type 1 (2); parainfluenza virus type 2 (1); human rhinovirus type 47 (1); herpes simplex virus (1); cytomegalovirus (1); and possible rhinovirus with final identification pending at CDC (2).

Nationwide, between October 2, 2005, and May 20, 2006, 12.6% (17,068) of the 135,973 respiratory specimens sent to the U.S. World Health Organization (WHO) Collaborating Laboratories and National Respiratory and Enteric Virus Surveillance System tested positive for influenza virus. Of these, 81.2% (13,857) of the influenza viruses identified were type A and 18.8% (3,211) were type B (See Graph 3). Of the 5,648 influenza A viruses that were subtyped, 92.6% (5,228) were influenza A (H3N2) viruses and 7.4% (420) were influenza A (H1) viruses. Of the 503 influenza A (H3N2) isolates that have been antigenically characterized by the CDC, 381 (75.7%) were characterized as A/California/07/2004-like, which is component of the 2005-06 influenza vaccine, and 122 (24.3%) viruses showed reduced titers with antisera produced against A/California/07/2004. Of these, 96 were tested with antisera produced against A/Wisconsin/67/2005 and 70 were A/Wisconsin-like.

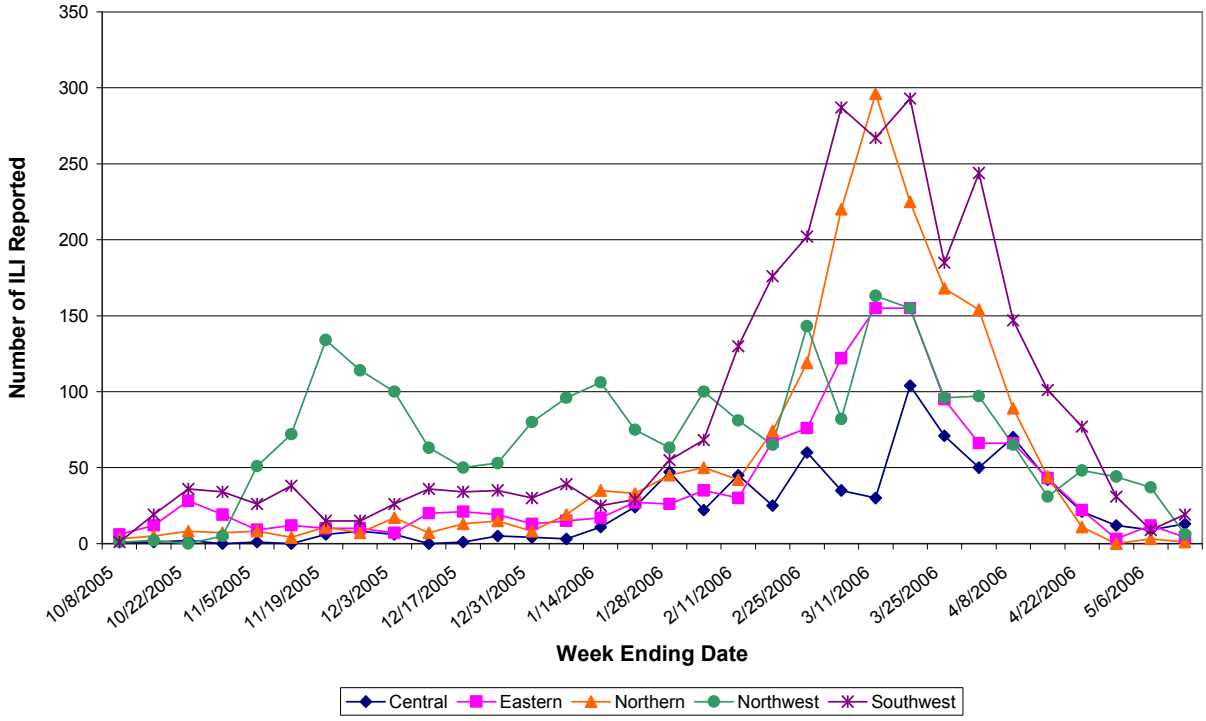
Vaccine

The annual supply and timing of influenza vaccine cannot be guaranteed in any year. Vaccine manufacturers are currently projecting that approximately 100 million doses of influenza vaccine will be available in the United States for the 2006-07 influenza season (16% more than were available for the 2005-06 season). An additional 15 to 20 million doses may be available if a new vaccine is licensed in 2006.

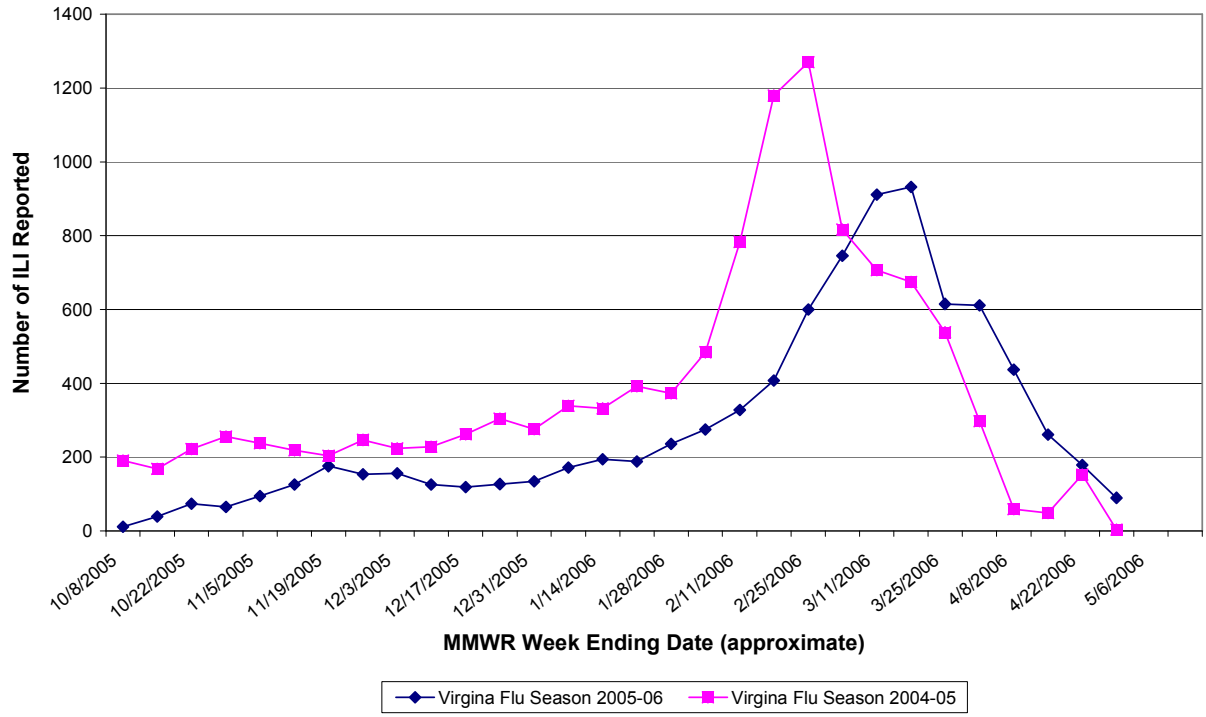
The trivalent influenza vaccine for the 2006-07 season will include an A/New Caledonia/20/99 (H1N1)-like virus; an A/Wisconsin/67/2005 (H3N2)-like virus (A/Wisconsin/67/2005 and A/Hiroshima/52/2005 strains); and a B/Malaysia/2506/2004-like virus (B/Malaysia/2506/2004 and B/Ohio/1/2005 strains).

Graphs

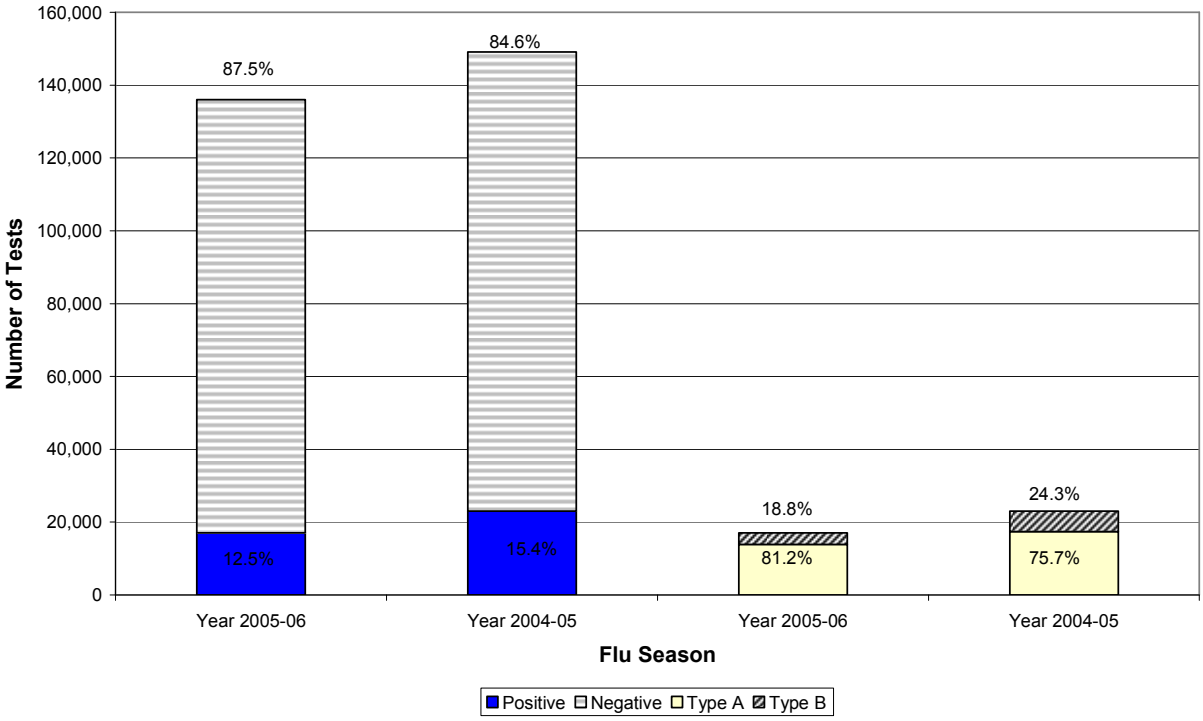
Graph 1. Influenza-like Illness (ILI) Reported by Sentinel Physicians During the 2005-06 Virginia Influenza Season, by Region



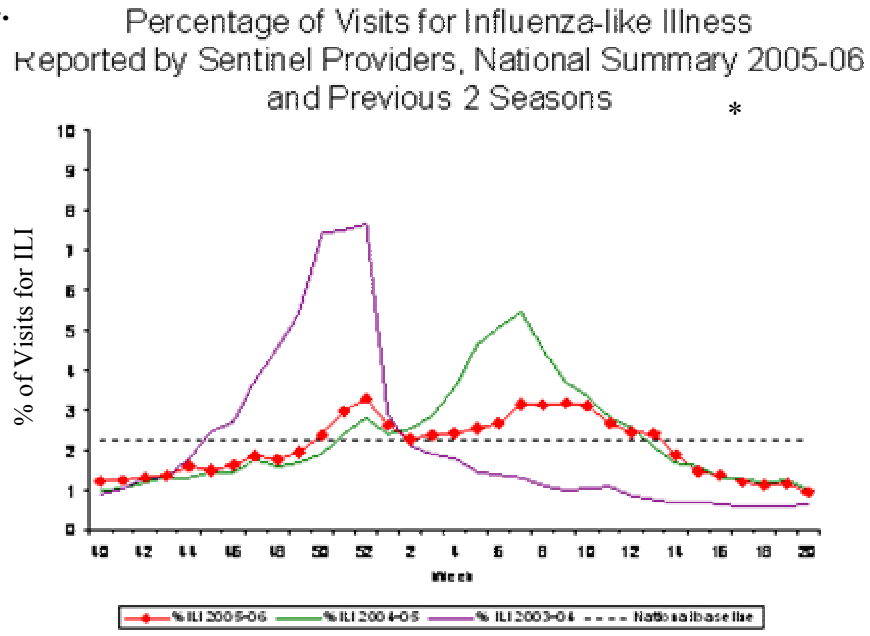
Graph 2. Comparison of Reported ILI Cases from Virginia Sentinel Physicians during the 2004-05 and 2005-06 Flu Seasons



Graph 3. Comparison Influenza Tests Conducted by WHO/NRVESS Laboratories for the 2005-06 and 2004-05 Flu Seasons

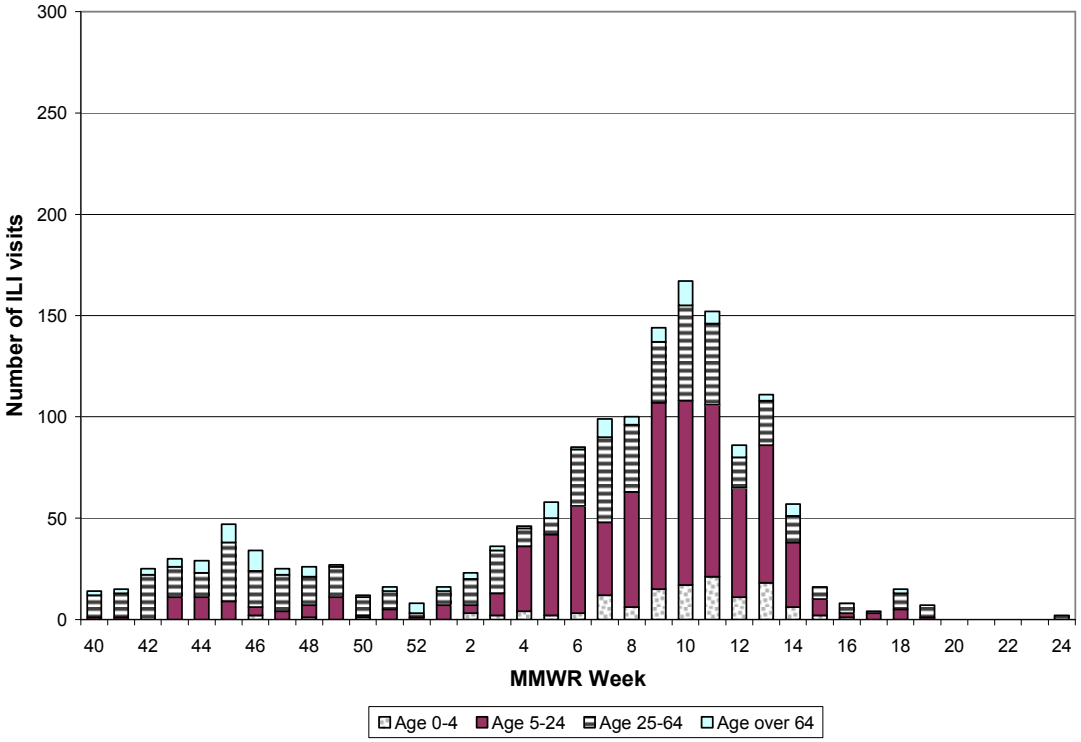


Graph 4.



* http://www.cdc.gov/flu/weekly/

Graph 5. Number of ILI Vistis to VA CDC Sentinel Physicians by Age Group, 2005-06



Note: Pediatric and University practices made up 20% of the total practices participating in the CDC sentinel surveillance system.